

## CLAIMS

What is claimed is:

1. In a direct sequence spread spectrum (DSSS) communications receiver, a system for demodulating information channels in a plurality of sample streams, the system comprising:
- a controller having an output to select a sample stream; and
- a plurality of demodulating fingers, each demodulating finger having a sample stream input to accept the plurality of sample streams, a selection input connected to the controller output to accept sample stream selection commands, and each demodulating finger demodulating information channels to provide soft symbols from the selected sample stream at a soft symbol output.
2. The system of claim 1 wherein each demodulating finger includes:
- a MUX having a first input connected to the demodulating finger sample stream input to accept the plurality of sample streams, a second input connected to the demodulating finger selection input to accept sample stream selection commands, and an output to provide the selected sample stream.
3. The system of claim 2 wherein each demodulating finger further includes:

a plurality of finger channels, wherein each finger channel includes a sample stream input connected to the MUX output to accept the selected sample stream, a code input to accept an uncovering code,<sup>pn</sup> each finger channel demodulating an information channel in the selected sample stream in response to the accepted uncovering code to provide soft symbols at a soft symbol output connected to the demodulating finger soft symbol output.

4. The system of claim 3 further comprising:  
a code generator having an output to provide uncovering codes; and  
wherein each demodulating finger further includes a code input connected to the code generator output to accept uncovering codes; and  
wherein the code input of each finger channel is connected to the demodulating finger code input to accept uncovering codes.

5. The system of claim 1 in which the plurality of sample streams are converted from a plurality of accepted carriers; and  
wherein each demodulating finger accepts sample streams converted from the plurality of carriers.

6. The system of claim 5 wherein the controller selects a sample stream for each of the demodulating fingers from the plurality of sample streams.

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7. The system of claim 6 in which three sample streams are respectively converted from a first, second, and third carrier;

wherein the controller assigns a first sample stream, from  
5 the first carrier, to a first demodulating finger from the plurality of demodulating fingers;

wherein the controller assigns a second sample stream, from the second carrier, to a second demodulating finger from the plurality of demodulating fingers; and

10 wherein the controller assigns a third sample stream, from the third carrier, to a third demodulating finger from the plurality of demodulating fingers.

8. The system of claim 6 in which three sample streams  
15 are respectively converted from a first, second, and third carrier;

wherein the controller assigns a first sample stream, from the first carrier, to a first demodulating finger from the plurality of demodulating fingers; and

20 wherein the controller assigns the first sample stream, from the first carrier, to a second demodulating finger from the plurality of demodulating fingers.

9. The system of claim 8 wherein the controller assigns the sample stream, from the first carrier, to a third demodulating finger  
25 from the plurality of demodulating fingers.

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10. The system of claim in which a first carrier is received with a least a first and second multipath delay, and in which the first carrier first and second multipath delays are converted into a first sample stream with at least a first and second delay;

wherein the controller assigns the first sample stream first delay to a first demodulating finger from the plurality of demodulating fingers; and

wherein the controller assigns the first sample stream second delay to a second demodulating finger from the plurality of demodulating fingers.

11. In a direct sequence spread spectrum (DSSS) communications receiver, a demodulating finger for demodulating information channels in a plurality of sample streams, the demodulating finger comprising:

a sample stream input to accept the plurality of sample streams;

a selection input to accept sample stream selection commands; and

a soft symbol output to provide soft symbols from demodulated information channels in the selected sample stream.

12. The demodulating finger of claim 11 further comprising:

a MUX having a first input connected to the demodulating finger sample stream input to accept the plurality of sample streams, a second input connected to the demodulating finger selection input to accept sample stream selection commands, and an output to provide the selected sample stream.

13. The demodulating finger of claim 12 further comprising:

a plurality of finger channels, wherein each finger channel includes a sample stream input connected to the MUX output to accept the selected sample stream, a code input to accept an uncovering code, each finger channel demodulating an information channel in the selected sample stream in response to the accepted uncovering code to provide soft symbols at a soft symbol output connected to the demodulating finger soft symbol output.

14. The demodulating finger of claim 13 wherein each demodulating finger further includes:

a code input to accept a plurality of uncovering codes; and wherein the code input of each finger channel is connected to the demodulating finger code input to accept an uncovering code.

15. The demodulating finger of claim 11 in which the plurality of sample streams correspond to a plurality of converted carriers; and

wherein the demodulating finger accepts the plurality of sample streams converted from the plurality of carriers.

16. The demodulating finger of claim 15 in which a first, second, and third sample stream are respectively converted from a first, second, and third carrier;

wherein the demodulating finger accepts commands for the selection of a sample stream from the group including first, second, and third sample streams.

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17. In a direct sequence spread spectrum (DSSS) communications receiver, a method for demodulating information channels in a plurality of sample streams, the method comprising:

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accepting a plurality of sample streams;  
selecting a sample stream from among the plurality of sample streams; and  
providing soft symbols from the selected sample stream.

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18. The method of claim 17 wherein accepting the plurality of sample streams includes each sample stream having an information channel; and

wherein providing soft symbols includes providing soft symbols from an uncovered information channel in the selected sample stream.

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19. The method of claim 18 further comprising:  
uncovering the information channel with a Walsh code.

20. The method of claim 19 further comprising:  
5 preceding the uncovering of the information channel with the  
Walsh code, accepting the Walsh code.

21. The method of claim 18 wherein accepting the  
plurality of sample streams includes each sample stream having a  
10 plurality of information channels; and  
wherein providing the soft symbols includes providing soft  
symbols from a plurality of demodulated information channels in the  
selected sample stream.

22. The method of claim 17 wherein selecting a sample  
15 stream includes selecting each sample stream from the plurality of sample  
streams; and

wherein providing soft symbols from the selected sample  
stream includes providing soft symbols from each of the plurality of  
20 sample streams.

23. The method of claim 17 in which a demodulating  
finger is included; and  
wherein the demodulating finger accepts the plurality of  
25 sample streams;

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wherein the demodulating finger accepts sample stream  
selection commands; and

wherein the demodulating finger provides the soft symbols  
from the selected sample stream.

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24. The method of claim 23 in which a controller is  
included, and the method further comprising:

the controller selecting the sample stream; and

wherein the demodulating finger accepts sample stream  
10 selection commands from the controller.

25. The method of claim 24 in which a plurality of  
demodulating fingers are included;

wherein each demodulating finger accepts the plurality of  
15 sample streams;

wherein the controller selects a sample stream for each  
demodulating finger;

wherein each demodulating finger accepts sample stream  
selection commands from the controller; and

20 wherein each demodulating finger provides the soft symbols  
from the selected sample stream.

26. The method of claim 25 further comprising:  
receiving a plurality of carriers; and

*method/  
apparatus*

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converting each carrier from the plurality of carriers to a sample stream in a plurality of sample streams.

27. The method of claim 25 in which a first, second and  
5 third demodulating finger are included;

wherein receiving a plurality of carriers includes receiving a first, second, and third carrier;

wherein converting each carrier from the plurality of carriers includes converting the first carrier to a first sample stream, the second  
10 carrier to a second sample stream, and a third carrier to a third sample stream; and

wherein the controller selects the first sample stream for the first demodulating finger, the second sample stream for the second demodulating finger, and the third sample stream for the third  
15 demodulating finger.

28. The method of claim 25 in which a first and second demodulating finger are included;

wherein receiving a plurality of carriers includes receiving a  
20 first, second, and third carrier;

wherein converting each carrier from the plurality of carriers includes converting the first carrier to a first sample stream, the second carrier to a second sample stream, and a third carrier to a third sample stream;

wherein the first and second demodulating fingers accept the first, second, and third sample streams; and

wherein the controller selects the first sample stream for the first demodulating finger and the first sample stream for the second  
5 demodulating finger.

29. The method of claim 25 in which a first, second, and third demodulating finger are included;

wherein receiving a plurality of carriers includes receiving a  
10 first carrier with a plurality of multipath delays, including a first, second, and third delay;

wherein converting each carrier from the plurality of carriers includes converting the first carrier with the plurality of delays to a first sample stream with a plurality of delays, including a first, second, and  
15 third delay;

wherein the first, second, and third demodulating fingers accept the first sample stream with the plurality of delays; and

wherein the controller selects the first sample stream first delay for the first demodulating finger, the first sample stream second  
20 delay for the second demodulating finger, and the first sample stream third delay for the third demodulating finger.

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